



ELECTRON TUBE DIVISION

CLIFTON, NEW JERSEY

INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

F-2517 BACKWARD WAVE OSCILLATOR

TENTATIVE

GENERAL

The F-2517 is a voltage-tunable, wide-band oscillator with a minimum output power of 50 milliwatts over its rated operating frequency range. This permanent magnet focused, highly stable device finds applications as a swept signal source in signal generators; master oscillator for frequency diversity transmitters; or typically as a local oscillator in radar or ECM receivers. The tube features a bifilar helix contained in a rugged envelope of simple mechanical design thus providing a highly reliable, compact unit. No cooling is required when the environment is below 160°C ambient temperature.

ELECTRICAL

	TYPICAL	ABSOLUTE	UNITS		TYPICAL	ABSOLUTE	UNITS
Frequency	3.7 - 5.5	Note 1	Gcs	Grid Voltage for no			
Power Output	50 - 250	50 min.	mw	Oscillation (RF Cutoff)			
Power Output Variation	7	8 max.	db	(with respect to Cathode)	-11	-30 max.	Volts
Fine Grain Variation, Note 2	+1.5	+2 max.	db	Collector Voltage (with			
VSWR	2.5:1	3:1 max.	—	respect to Helix)	+100	+150 max.	Volts
Output Impedance	50	50	Ohms	Capacitance, Cathode to			
Heater Voltage	6.3	6.0 min./	Volts	all Electrodes	42	50 max.	μμfd.
		6.6 max.		Capacitance, Grid to			
Heater Current	.98	1.20 max.	Amps	all Electrodes	30	45 max.	μμfd.
Anode Voltage	130	250 max.	Volts	Capacitance, Helix to all			
Anode Current (with	.25	1.0 max.	Ma	other Electrodes and			
respect to Cathode)				Capsule	210	300 max.	μμfd.
Cathode Current	15.0	20 max.	Ma	Spurious Output below			
Helix Voltage (with	300 to	200 to	Volts	Signal	30	40 min.	db
respect to Cathode)	960	1100					
Helix Current	1.5	3.0 max.	Ma				
Cathode Voltage	Zero	Zero	Volts				
	(ground)	(ground)					

NOTE 1 The F-2517 will operate over the frequency range of 3.663 to 5.555 Gcs. with a 3 db reduction in the rated minimum output power.

NOTE 2 This value is determined by selecting the 180 mc region of the frequency range which has the greatest differences in power output. The difference between these power levels is divided by two and the plus or minus sign is affixed to denote the difference from an average power level.

MECHANICAL

Package Length	9.90	9.95 max.	Inches	Output Cable Length		
Package Diameter	3.00	3.02 max.	Inches	(to end of Type		
Package Weight	9 lbs. -14 oz.	10 max.	Pounds	"N" Connector)	15	14 min./16 max. Inches
Power Cable Length						
(to end of						
MS3106B18-IP Plug)	12	11 min./13 max.	Inches			

Additional information for specific applications can be obtained from the

Electron Tube Applications Section
ITT Electron Tube Division
Post Office Box 104
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